

Jack Hammer (Brewdog)

- Gravity **18.2 BLG**
- ABV **7.8 %**
- IBU **117**
- SRM **4.5**
- Style **American IPA**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **83 %**
- Liquor-to-grist ratio **2.62 liter(s) / kg**
- Mash size **17 liter(s)**
- Total mash volume **23.5 liter(s)**

Steps

- Temp **65 C**, Time **75 min**

Mash step by step

- Heat up **17 liter(s)** of strike water to **73.6C**
- Add grains
- Keep mash **75 min** at **65C**
- Sparge using **14.8 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	6 kg (92.3%)	82 %	4
Grain	Strzegom Pale Ale	0.5 kg (7.7%)	79 %	6

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Centennial	25 g	75 min	10.5 %
Boil	Columbus/Tomahawk/Zeus	30 g	75 min	15.5 %
Boil	Centennial	18 g	35 min	10.5 %
Boil	Columbus/Tomahawk/Zeus	18 g	35 min	15.5 %
Boil	Centennial	50 g	5 min	10.5 %
Boil	Columbus/Tomahawk/Zeus	25 g	5 min	15.5 %
Dry Hop	Amarillo	100 g	7 day(s)	9.5 %
Dry Hop	Citra	100 g	7 day(s)	12 %
Dry Hop	Simcoe	100 g	7 day(s)	13.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Fermentis